

(FILE 'USPAT' ENTERED AT 15:32:09 ON 26 FEB 1998)

L1	759223 S PRODUCE
L2	1000 S L1 AND CHLORINE DIOXIDE
L3	91 S L2 AND RINSE
L4	952 S L2 AND WATER
L5	47 S L4 AND PROCESS WATER
L6	16 S L5 AND CHLORINE (P) PROCESS WATER
L7	4 S L6 AND VEGETABLES
L8	4 S L6 AND FRUIT
L9	4 S L7 AND L8
L10	4 S L7 OR L8

1. 5,683,724, Nov. 4, 1997, Automated process for inhibition of microbial growth in aqueous food transport or process streams; Robert D. P. Hei, et al., 424/616; 210/759; 422/28, 29, 82.01, 82.02, 82.03; 426/331, 333, 335, 532; 514/557, 558, 559, 560, 574 [IMAGE AVAILABLE]

2. 5,674,538, Oct. 7, 1997, Process for inhibition of microbial growth in aqueous food transport or process streams; Keith D. Lokkesmoe, et al., 424/616; 210/759; 422/28, 29; 426/331, 333, 335, 532; 514/557, 558, 559, 560, 574 [IMAGE AVAILABLE]

3. 4,689,169, Aug. 25, 1987, Dry compositions for the production of **chlorine dioxide**; John Y. Mason, et al., 252/186.24, 187.23; 426/316 [IMAGE AVAILABLE]

4. 4,547,381, Oct. 15, 1985, Dry compositions for the production of **chlorine dioxide**; John Y. Mason, et al., 426/316; 252/186.2, 186.24, 187.23; 422/5, 29; 423/477; 426/318 [IMAGE AVAILABLE]

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L1 759223 S PRODUCE  
L2 1000 S L1 AND CHLORINE DIOXIDE  
L3 91 S L2 AND RINSE  
L4 952 S L2 AND WATER  
L5 47 S L4 AND PROCESS WATER  
L6 16 S L5 AND CHLORINE (P) PROCESS WATER  
L7 4 S L6 AND VEGETABLES  
L8 4 S L6 AND FRUIT  
L9 4 S L7 AND L8  
L10 4 S L7 OR L8

FILE 'JPO' ENTERED AT 15:49:23 ON 26 FEB 1998

L11 115166 S L1-L10  
L12 22 S L11 AND CHLORINE DIOXIDE  
L13 7 S L12 AND PROCESS  
L14 0 S L12 AND PROCESS WATER  
L15 7 S L13 AND PROCESS

4404 S8  
406598 PRODUCE  
S9 111 S8 AND PRODUCE  
? s s9 and vegetable?  
  
111 S9  
384269 VEGETABLE?  
S10 2 S9 AND VEGETABLE?  
? t /9/1, 2

10/9/1 (Item 1 from file: 5)  
DIALOG(R)File 5:BIOSIS PREVIEWS(R)  
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11737252 BIOSIS Number: 98337252

Improved Determination of Chlorite and Chlorate in Rinse Water from Carrots and Green Beans by Liquid Chromatography and Amperometric and Conductivity Detection

Bettler M K; Chin H B

National Food Processors Association, 6363 Clark Ave., Dublin, CA 94568-3097, USA

Journal of AOAC International 78 (3). 1995. 878-883.

Full Journal Title: Journal of AOAC International

ISSN: 1060-3271

Language: ENGLISH

Print Number: Biological Abstracts Vol. 100 Iss. 003 Ref. 044976

A method is presented for determining chlorite and chlorate in the presence of interfering organic compounds in rinse water from **vegetables**. Rinse water from cut raw carrots and green beans was fortified separately with chlorite and chlorate, filtered (0.45  $\mu$ m), and analyzed by liquid chromatography with amperometric and conductivity detection. Detection limits for chlorite and chlorate in carrot rinse water were 17 and 50 ppb, respectively. Average recoveries from rinse water were 95% for chlorite in a 0.084-1.00 ppm range and 90% for chlorate in a 0.078-1.00 ppm range.

Descriptors/Keywords: RESEARCH ARTICLE; **CHLORINE DIOXIDE**

-TREATED **PRODUCE** TOXICITY; CHLORIDE; ANION-EXCHANGE; ANALYTICAL METHOD

Concept Codes:

\*10059 Biochemical Methods-Minerals  
\*10069 Biochemical Studies-Minerals  
\*10504 Biophysics-General Biophysical Techniques  
\*13502 Food Technology-General; Methods  
\*13504 Food Technology-Fruits, Nuts and Vegetables  
\*13530 Food Technology-Evaluations of Physical and Chemical Properties (1970- )  
\*22501 Toxicology-General; Methods and Experimental  
\*22502 Toxicology-Foods, Food Residues, Additives and Preservatives

10/9/2 (Item 1 from file: 60)  
DIALOG(R)File 60:CRIS/USDA  
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09174639  
PROJ NO: FLA-PLP-03588 AGENCY : CSRS FLA

PROJ TYPE: HATCH  
START: 01 OCT 97 TERM: SEP 02  
INVEST: BARTZ JA  
PLANT PATHOLOGY  
UNIVERSITY OF FLORIDA  
GAINESVILLE FLORIDA 32610

SANITATION IN POST HARVEST HANDLING PRACTICES FOR FRESH FRUITS AND  
VEGETABLES

PRIMARY CLASSIFICATION					GENERAL CLASSIFICATION	
RPA	ACTVTY	CMMDTY	SCNCE	PRCNT	PRGM	JTC
R404	A4600	C1100	F1112	010%	P3.14	J3A
R404	A4600	C1200	F1112	010%	P3.14	J3A
R404	A4600	C1000	F1112	010%	P3.13	J3A
R404	A4600	C0900	F1112	010%	P3.13	J3A
R404	A4870	C1000	F1112	010%	P3.13	J3A
R404	A4870	C1100	F1112	015%	P3.14	J3A
R404	A4870	C1200	F1112	015%	P3.14	J3A
R404	A5550	C1100	F1112	010%	P3.14	J3C
R404	A5550	C1200	F1112	010%	P3.14	J3C

PRIMARY HEADINGS: R404 Quality Maintenance-Fruit, Vegetables; A4600 Protection Against Diseases, Parasites; A4870 Protection Against Molds, Spoilage; A5550 Food Product Handling and Packaging; C1100 Potatoes; C1200 Vegetables; C1000 Deciduous and Small Fruits and Nuts; C0900 Citrus, Tropical, Subtropical Fruit; F1112 Pathology-Plant

GENERAL HEADINGS: P3.14 Vegetable Crops; P3.13 Fruit; J3A Food Systems; J3C Food Quality and Safety

SPECIAL CLASSIFICATION AND HEADINGS		
S1033	Strawberries	020%
S1261	Tomatoes	035%
S0999	Citrus, Tropical, Subtropical Fruit, Gnl	010%

BASIC 040%      APPLIED 040%      DEVELOPMENTAL 020%

OBJECTIVES: 1. To determine optimal methods for sanitizing packinghouses and packinglines. 2. To evaluate alternative sanitizers. 3. To integrate sanitation with other packinghouse measures to provide improvements in disease control and quality maintenance.

APPROACH: 1. Evaluate effects of water temperature, **chlorine** concentration, solution pH, and solution surface tension on the transfers of microbes among tomatoes in dump tanks and flumes. Test for potential buildups of biofilms, organic matter, and microorganism on packingline equipment such as sponge rollers, belts, etc. 2. Compare **chlorine** with **chlorine dioxide**, ozone, chloramine, and **chlorine** bromine mixtures for protecting tomatoes from becoming infected or contaminated by microorganisms. Efficacy will be compared in clean versus "soiled" water. Parameters of efficacy will include prevention of contamination as well as sanitizing contaminated products. 3. Evaluate whether unloading methods lead to infiltration of product with water and whether abrupt infiltration can cause contamination. Consider use of chlorinated water in hydrocoolers to cool, wash and sanitize in one operation.

KEYWORDS: FRUIT      VEGETABLES      FOOD      FRESH-PRODUCE  
POST-HARVEST-LOSSES      HANDLING-SYSTEMS      FOOD-HANDLING      SANITATION      FOOD-SAFETY  
PACKINGHOUSES      FOOD-PACKING      DISEASE-CONTROL      FOOD-QUALITY      QUALITY-MAINTENANCE  
CHLORINATION      TOMATOES      BACTERIAL-CONTAMINATION      WASHING      FOOD-MICROBIOLOGY  
CLEANING-AGENTS

SUPPLEMENTARY DATA: C CODE: 001760; INST CODE: 001535; REG: 2;  
PROCESS DATE: 970514; PROJECT STATUS: NEW

SUBFILE: CRIS  
? ds

Set	Items	Description
S1	406598	PRODUCE
S2	38935	S1 AND WATER
S3	79	S2 AND PROCESS (W) WATER
S4	0	S3 AND CHLORINE DIOXIDE
S5	0	S3 AND CHLORINE (W) DIOXIDE
S6	160591	CHLORINE
S7	7966	S6 AND DIOXIDE
S8	4404	S7 AND CHLORINE (W) DIOXIDE
S9	111	S8 AND PRODUCE

111 S9  
 494764 FRUIT  
 S11 1 S9 AND FRUIT  
 ? t /9/1

11/9/1 (Item 1 from file: 60)  
 DIALOG(R)File 60:CRIS/USDA  
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09174639  
 PROJ NO: FLA-PLP-03588 AGENCY : CSRS FLA  
 PROJ TYPE: HATCH  
 START: 01 OCT 97 TERM: 30 SEP 02  
 INVEST: BARTZ JA  
 PLANT PATHOLOGY  
 UNIVERSITY OF FLORIDA  
 GAINESVILLE FLORIDA 32610

SANITATION IN POST HARVEST HANDLING PRACTICES FOR FRESH FRUITS AND  
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R404	A5550	C1100	F1112	010%	P3.14	J3C
R404	A5550	C1200	F1112	010%	P3.14	J3C

PRIMARY HEADINGS: R404 Quality Maintenance-Fruit, Vegetables; A4600  
 Protection Against Diseases, Parasites; A4870 Protection Against Molds,  
 Spoilage; A5550 Food Product Handling and Packaging; C1100 Potatoes;  
 C1200 Vegetables; C1000 Deciduous and Small Fruits and Nuts; C0900  
 Citrus, Tropical, Subtropical Fruit; F1112 Pathology-Plant

GENERAL HEADINGS: P3.14 Vegetable Crops; P3.13 Fruit; J3A Food Systems;  
 J3C Food Quality and Safety

SPECIAL CLASSIFICATION AND HEADINGS

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POST-HARVEST-LOSSES HANDLING-SYSTEMS FOOD-HANDLING SANITATION FOOD-SAFETY  
PACKINGHOUSES FOOD-PACKING DISEASE-CONTROL FOOD-QUALITY QUALITY-MAINTENANCE  
CHLORINATION TOMATOES BACTERIAL-CONTAMINATION WASHING FOOD-MICROBIOLOGY  
CLEANING-AGENTS

SUPPLEMENTARY DATA: ORG CODE: 001760; INST CODE: 001535; REG: 2;



11/9/1 (Item 1 from file: 60)  
 DIALOG(R)File 60:CRIS/USDA  
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CLEANING-AGENTS

SUPPLEMENTARY DATA:    ORG CODE:    001760;    INST CODE:    001535;    REG: 2;  
PROCESS DATE:    970514;    PROJECT STATUS:    NEW

SUBFILE: CRIS